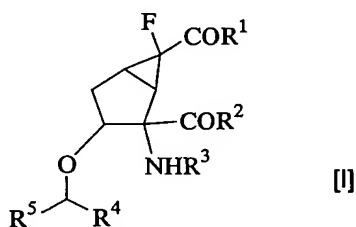


# CLAIMS

1. An antidepressant comprising, as an active ingredient, a compound having an antagonistic effect on group II metabotropic glutamate receptors.
2. A 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative of Formula [I]:



[wherein

- 10 R¹ and R², which may be the same or different, each represent a hydroxyl group, a C<sub>1-10</sub> alkoxy group, a phenoxy group, a naphthyloxy group, a C<sub>1-6</sub> alkoxy group which is substituted with one or two phenyl groups, a C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> alkoxy group, a hydroxy-C<sub>2-6</sub> alkoxy group, an amino group,
- 15 an amino group which is substituted with the same or different one or two C<sub>1-6</sub> alkyl groups, an amino group which is substituted with the same or different one or two C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> alkyl groups, an amino group which is substituted with the same or different one or two hydroxy-C<sub>2-6</sub> alkyl groups, an amino group which is substituted with the same or different one or two C<sub>1-6</sub> alkoxycarbonyl-C<sub>1-6</sub> alkyl groups, or a native or non-native amino acid residue represented by NR⁶-CHR⁷-A-CO₂R⁸ (wherein R⁶ and R⁷, which may
- 20

be the same or different, each represent a hydrogen atom, a hydroxy-C<sub>1-6</sub> alkyl group, a hydroxycarbonyl-C<sub>1-6</sub> alkyl group, a C<sub>1-10</sub> alkyl group, a phenyl group, a phenyl-C<sub>1-6</sub> alkyl group, a hydroxyphenyl group, a hydroxyphenyl-C<sub>1-6</sub> alkyl group, a naphthyl group, a naphthyl-C<sub>1-6</sub> alkyl group, an aromatic heterocyclic C<sub>1-6</sub> alkyl group, a C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> alkyl group, an amino-C<sub>2-6</sub> alkyl group, a guanidino-C<sub>2-6</sub> alkyl group, a mercapto-C<sub>2-6</sub> alkyl group, a C<sub>1-6</sub> alkylthio-C<sub>1-6</sub> alkyl group or an aminocarbonyl-C<sub>1-6</sub> alkyl group, or R<sup>6</sup> and R<sup>7</sup> may together represent a group capable of forming a methylene group, an ethylene group or a propylene group, or may together form a cyclic amino group; R<sup>8</sup> represents a hydrogen atom or a protecting group for a carboxyl group; and A represents a single bond, a methylene group, an ethylene group or a propylene group);

R<sup>3</sup> represents a C<sub>1-10</sub> acyl group, a C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> acyl group, a hydroxy-C<sub>2-10</sub> acyl group, a C<sub>1-6</sub> alkoxycarbonyl-C<sub>1-6</sub> acyl group, a hydroxycarbonyl-C<sub>1-6</sub> acyl group, or an amino acid residue represented by R<sup>9</sup>-NH-A-CHR<sup>7</sup>-CO (wherein R<sup>7</sup> and A are as defined above, and R<sup>9</sup> represents a hydrogen atom or a protecting group for an amino group); and

R<sup>4</sup> and R<sup>5</sup>, which may be the same or different, each represent a hydrogen atom, a C<sub>1-10</sub> alkyl group, a C<sub>2-10</sub> alkenyl group, a phenyl group, a naphthyl group, a 5-membered heteroaromatic ring containing one or more heteroatoms, or a phenyl group substituted with 1 to 5 substituents selected from the group consisting of a halogen atom, a C<sub>1-10</sub> alkyl group, a C<sub>1-10</sub> alkoxy group, a

trifluoromethyl group, a phenyl group, a hydroxycarbonyl group, an amino group, a nitro group, a cyano group and a phenoxy group, or R<sup>4</sup> and R<sup>5</sup> may together form a cyclic structure]

5 or a pharmaceutically acceptable salt or hydrate thereof.

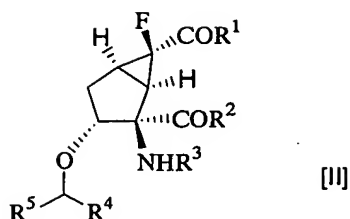
3. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 2, wherein in Formula [I], R<sup>1</sup> and R<sup>2</sup> are each a hydroxyl group and R<sup>3</sup> is a hydrogen atom, or a pharmaceutically  
10 acceptable salt or hydrate thereof.

4. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 2, wherein in Formula [I], R<sup>1</sup> is a hydroxyl group and R<sup>3</sup> is a hydrogen atom, or a pharmaceutically acceptable salt or  
15 hydrate thereof.

5. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 2, wherein in Formula [I], R<sup>2</sup> is a hydroxyl group and R<sup>3</sup> is a hydrogen atom, or a pharmaceutically acceptable salt or  
20 hydrate thereof.

6. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 2, wherein in Formula [I], R<sup>1</sup> and R<sup>2</sup> are each a hydroxyl group, or a pharmaceutically acceptable salt or hydrate thereof.

25 7. A 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative of Formula [II]:



[wherein

$R^1$  and  $R^2$ , which may be the same or different, each represent a hydroxyl group, a  $C_{1-10}$  alkoxy group, a phenoxy group, a naphthyloxy group, a  $C_{1-6}$  alkoxy group which is substituted with one or two phenyl groups, a  $C_{1-6}$  alkoxy- $C_{1-6}$  alkoxy group, a hydroxy- $C_{2-6}$  alkoxy group, an amino group, an amino group which is substituted with the same or different one or two  $C_{1-6}$  alkyl groups, an amino group which is substituted with the same or different one or two  $C_{1-6}$  alkoxy- $C_{1-6}$  alkyl groups, an amino group which is substituted with the same or different one or two hydroxy- $C_{2-6}$  alkyl groups, an amino group which is substituted with the same or different one or two  $C_{1-6}$  alkoxycarbonyl- $C_{1-6}$  alkyl groups, or a native or non-native amino acid residue represented by  $NR^6-CHR^7-A-CO_2R^8$  (wherein  $R^6$  and  $R^7$ , which may be the same or different, each represent a hydrogen atom, a hydroxy- $C_{1-6}$  alkyl group, a hydroxycarbonyl- $C_{1-6}$  alkyl group, a  $C_{1-10}$  alkyl group, a phenyl group, a phenyl- $C_{1-6}$  alkyl group, a hydroxyphenyl group, a hydroxyphenyl- $C_{1-6}$  alkyl group, a naphthyl group, a naphthyl- $C_{1-6}$  alkyl group, an aromatic heterocyclic  $C_{1-6}$  alkyl group, a  $C_{1-6}$  alkoxy- $C_{1-6}$  alkyl group, an amino- $C_{2-6}$  alkyl group, a guanidino- $C_{2-6}$  alkyl group, a mercapto- $C_{2-6}$  alkyl group, a  $C_{1-6}$  alkylthio-

C<sub>1-6</sub> alkyl group or an aminocarbonyl-C<sub>1-6</sub> alkyl group, or R<sup>6</sup> and R<sup>7</sup> may together represent a group capable of forming a methylene group, an ethylene group or a propylene group, or may together form a cyclic amino group; R<sup>8</sup> represents a  
5 hydrogen atom or a protecting group for a carboxyl group; and A represents a single bond, a methylene group, an ethylene group or a propylene group);

R<sup>3</sup> represents a C<sub>1-10</sub> acyl group, a C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> acyl group, a hydroxy-C<sub>2-10</sub> acyl group, a C<sub>1-6</sub> alkoxycarbonyl-C<sub>1-6</sub>  
10 acyl group, a hydroxycarbonyl-C<sub>1-6</sub> acyl group, or an amino acid residue represented by R<sup>9</sup>-NH-A-CHR<sup>7</sup>-CO (wherein R<sup>7</sup> and A are as defined above, and R<sup>9</sup> represents a hydrogen atom or a protecting group for an amino group); and

R<sup>4</sup> and R<sup>5</sup>, which may be the same or different, each  
15 represent a hydrogen atom, a C<sub>1-10</sub> alkyl group, a C<sub>2-10</sub> alkenyl group, a phenyl group, a naphthyl group, a 5-membered heteroaromatic ring containing one or more heteroatoms, or a phenyl group substituted with 1 to 5 substituents selected from the group consisting of a  
20 halogen atom, a C<sub>1-10</sub> alkyl group, a C<sub>1-10</sub> alkoxy group, a trifluoromethyl group, a phenyl group, a hydroxycarbonyl group, an amino group, a nitro group, a cyano group and a phenoxy group, or R<sup>4</sup> and R<sup>5</sup> may together form a cyclic structure]

25 or a pharmaceutically acceptable salt or hydrate thereof.

8. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 7, wherein in Formula [II], R<sup>1</sup> and R<sup>2</sup> are each a hydroxyl

group and  $R^3$  is a hydrogen atom, or a pharmaceutically acceptable salt or hydrate thereof.

9. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 7,  
5 wherein in Formula [II],  $R^1$  is a hydroxyl group and  $R^3$  is a hydrogen atom, or a pharmaceutically acceptable salt or hydrate thereof.

10. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 7,  
10 wherein in Formula [II],  $R^1$  is a hydroxyl group,  $R^3$  is a hydrogen atom, and  $R^2$  is a  $C_{1-10}$  alkoxy group or a  $C_{1-6}$  alkoxy group substituted with one phenyl group, or a pharmaceutically acceptable salt or hydrate thereof.

11. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 7,  
15 wherein in Formula [II],  $R^1$  is a hydroxyl group,  $R^3$  is a hydrogen atom, and  $R^2$  is  $NH-CHR^7-CO_2H$ , or a pharmaceutically acceptable salt or hydrate thereof.

12. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 7,  
20 wherein in Formula [II],  $R^2$  is a hydroxyl group and  $R^3$  is a hydrogen atom, or a pharmaceutically acceptable salt or hydrate thereof.

13. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 7,  
25 wherein in Formula [II],  $R^2$  is a hydroxyl group,  $R^3$  is a hydrogen atom, and  $R^1$  is a  $C_{1-10}$  alkoxy group or a  $C_{1-6}$  alkoxy group substituted with one phenyl group, or a

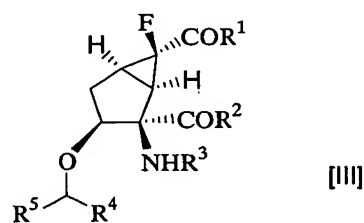
pharmaceutically acceptable salt or hydrate thereof.

14. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 7, wherein in Formula [II],  $R^2$  is a hydroxyl group,  $R^3$  is a hydrogen atom, and  $R^1$  is  $NH-CHR^7-CO_2H$ , or a pharmaceutically acceptable salt or hydrate thereof.

15. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 7, wherein in Formula [II],  $R^1$  and  $R^2$  are each a hydroxyl group, or a pharmaceutically acceptable salt or hydrate thereof.

16. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 7, wherein in Formula [II],  $R^1$  and  $R^2$  are each a hydroxyl group and  $R^3$  is  $H_2N-CHR^7-CO$ , or a pharmaceutically acceptable salt or hydrate thereof.

17. A 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative of Formula [III]:



20 [wherein

$R^1$  and  $R^2$ , which may be the same or different, each represent a hydroxyl group, a  $C_{1-10}$  alkoxy group, a phenoxy group, a naphthyloxy group, a  $C_{1-6}$  alkoxy group which is

substituted with one or two phenyl groups, a C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> alkoxy group, a hydroxy-C<sub>2-6</sub> alkoxy group, an amino group, an amino group which is substituted with the same or different one or two C<sub>1-6</sub> alkyl groups, an amino group  
5 which is substituted with the same or different one or two C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> alkyl groups, an amino group which is substituted with the same or different one or two hydroxy-C<sub>2-6</sub> alkyl groups, an amino group which is substituted with the same or different one or two C<sub>1-6</sub> alkoxycarbonyl-C<sub>1-6</sub>  
10 alkyl groups, or a native or non-native amino acid residue represented by NR<sup>6</sup>-CHR<sup>7</sup>-A-CO<sub>2</sub>R<sup>8</sup> (wherein R<sup>6</sup> and R<sup>7</sup>, which may be the same or different, each represent a hydrogen atom, a hydroxy-C<sub>1-6</sub> alkyl group, a hydroxycarbonyl-C<sub>1-6</sub> alkyl group, a C<sub>1-10</sub> alkyl group, a phenyl group, a phenyl-C<sub>1-6</sub>  
15 alkyl group, a hydroxyphenyl group, a hydroxyphenyl-C<sub>1-6</sub> alkyl group, a naphthyl group, a naphthyl-C<sub>1-6</sub> alkyl group, an aromatic heterocyclic C<sub>1-6</sub> alkyl group, a C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> alkyl group, an amino-C<sub>2-6</sub> alkyl group, a guanidino-C<sub>2-6</sub> alkyl group, a mercapto-C<sub>2-6</sub> alkyl group, a C<sub>1-6</sub> alkylthio-  
20 C<sub>1-6</sub> alkyl group or an aminocarbonyl-C<sub>1-6</sub> alkyl group, or R<sup>6</sup> and R<sup>7</sup> may together represent a group capable of forming a methylene group, an ethylene group or a propylene group, or may together form a cyclic amino group; R<sup>8</sup> represents a hydrogen atom or a protecting group for a carboxyl group;  
25 and A represents a single bond, a methylene group, an ethylene group or a propylene group);

R<sup>3</sup> represents a C<sub>1-10</sub> acyl group, a C<sub>1-6</sub> alkoxy-C<sub>1-6</sub> acyl group, a hydroxy-C<sub>2-10</sub> acyl group, a C<sub>1-6</sub> alkoxycarbonyl-C<sub>1-6</sub>



acyl group, a hydroxycarbonyl-C<sub>1-6</sub> acyl group, or an amino acid residue represented by R<sup>9</sup>-NH-A-CHR<sup>7</sup>-CO (wherein R<sup>7</sup> and A are as defined above, and R<sup>9</sup> represents a hydrogen atom or a protecting group for an amino group); and

5           R<sup>4</sup> and R<sup>5</sup>, which may be the same or different, each represent a hydrogen atom, a C<sub>1-10</sub> alkyl group, a C<sub>2-10</sub> alkenyl group, a phenyl group, a naphthyl group, a 5-membered heteroaromatic ring containing one or more heteroatoms, or a phenyl group substituted with 1 to 5  
10       substituents selected from the group consisting of a halogen atom, a C<sub>1-10</sub> alkyl group, a C<sub>1-10</sub> alkoxy group, a trifluoromethyl group, a phenyl group, a hydroxycarbonyl group, an amino group, a nitro group, a cyano group and a phenoxy group, or R<sup>4</sup> and R<sup>5</sup> may together form a cyclic  
15       structure]

or a pharmaceutically acceptable salt or hydrate thereof.

18.    The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 17, wherein in Formula [III], R<sup>1</sup> and R<sup>2</sup> are each a hydroxyl  
20       group and R<sup>3</sup> is a hydrogen atom, or a pharmaceutically acceptable salt or hydrate thereof.

19.    The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 17, wherein in Formula [III], R<sup>1</sup> is a hydroxyl group and R<sup>3</sup> is  
25       a hydrogen atom, or a pharmaceutically acceptable salt or hydrate thereof.

20.    The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 17,

wherein in Formula [III],  $R^1$  is a hydroxyl group,  $R^3$  is a hydrogen atom, and  $R^2$  is a  $C_{1-10}$  alkoxy group or a  $C_{1-6}$  alkoxy group substituted with one phenyl group, or a pharmaceutically acceptable salt or hydrate thereof.

5 21. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 17, wherein in Formula [III],  $R^1$  is a hydroxyl group,  $R^3$  is a hydrogen atom, and  $R^2$  is  $NH-CHR^7-CO_2H$ , or a pharmaceutically acceptable salt or hydrate thereof.

10 22. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 17, wherein in Formula [III],  $R^2$  is a hydroxyl group and  $R^3$  is a hydrogen atom, or a pharmaceutically acceptable salt or hydrate thereof.

15 23. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 17, wherein in Formula [III],  $R^2$  is a hydroxyl group,  $R^3$  is a hydrogen atom, and  $R^1$  is a  $C_{1-10}$  alkoxy group or a  $C_{1-6}$  alkoxy group substituted with one phenyl group, or a  
20 pharmaceutically acceptable salt or hydrate thereof.

24. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 17, wherein in Formula [III],  $R^2$  is a hydroxyl group,  $R^3$  is a hydrogen atom, and  $R^1$  is  $HN-CHR^7-CO_2H$ , or a  
25 pharmaceutically acceptable salt or hydrate thereof.

25. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 17, wherein in Formula [III],  $R^1$  and  $R^2$  are each a hydroxyl

group, or a pharmaceutically acceptable salt or hydrate thereof.

26. The 2-amino-3-alkoxy-6-fluorobicyclo[3.1.0]hexane-2,6-dicarboxylic acid derivative according to claim 17,  
5 wherein in Formula [III],  $R^1$  and  $R^2$  are each a hydroxyl group and  $R^3$  is  $NH_2-CHR^7-CO$ , or a pharmaceutically acceptable salt or hydrate thereof.

27. A pharmaceutical preparation comprising one or more pharmaceutically acceptable carriers, excipients or  
10 diluents and the compound according to any one of claims 2 to 26.

28. A drug comprising the compound according to any one of claims 2 to 26 as an active ingredient.

29. The drug according to claim 28, which is an  
15 antagonist of group II metabotropic glutamate receptors.

30. The use of the compound according to any one of claims 2 to 26 as a drug.